

ABSTRACT

As the dimensions of spin valve heads continue to be reduced, a number of difficulties are being encountered. One such is with the longitudinal bias when an external magnetic field can cause reversal of the hard magnet, thereby causing a hysteric response by the head. This coercivity reduction becomes more severe as the hard magnet becomes thinner. This problem has been overcome by inserting a decoupling layer between the antiferromagnetic layer that is used to stabilize the pinned layer of the spin valve itself and the soft ferromagnetic layer that is used for longitudinal biasing. This soft ferromagnetic layer is pinned by a second antiferromagnetic layer deposited on it on its far side away from the first antiferromagnetic layer. The presence of the decoupling layer ensures that the magnetization of the soft layer is determined only by the second antiferromagnetic layer. The inclusion of said decoupling layer allows more latitude in etch depth control during manufacturing.